

Full Spectrum NIR Spectrometer

IR2000 Pro

Features

- Unique light path design;
- 256 InGaAs linear array detector technology;
- No sample preparation required;
- Large light spot, rotating scanning;
- integrated design;
- High-definition touch screen operation;
- High life light source (more than 10,000 hours);
- Multiple data transmission interfaces;

Application

- Grain industry: Measurement of moisture, protein, fat, and other parameters in wheat, soybeans, etc.
- Flour milling industry: Measurement of moisture, protein, fiber, sedimentation value, ash content, and other parameters.
- Feed industry: Final feed products, including pet food.

Description

IR2000pro is a multifunctional full-spectrum near-infrared analyzer newly developed by Optosky based on InGaAs linear array detector. It is specially designed for fast and non-destructive analysis. It combines exceptional analytical accuracy with speed, ease of use and ruggedness. It is widely used and can detect moisture, protein, fat, ash, starch and other parameters in almost all solid samples.

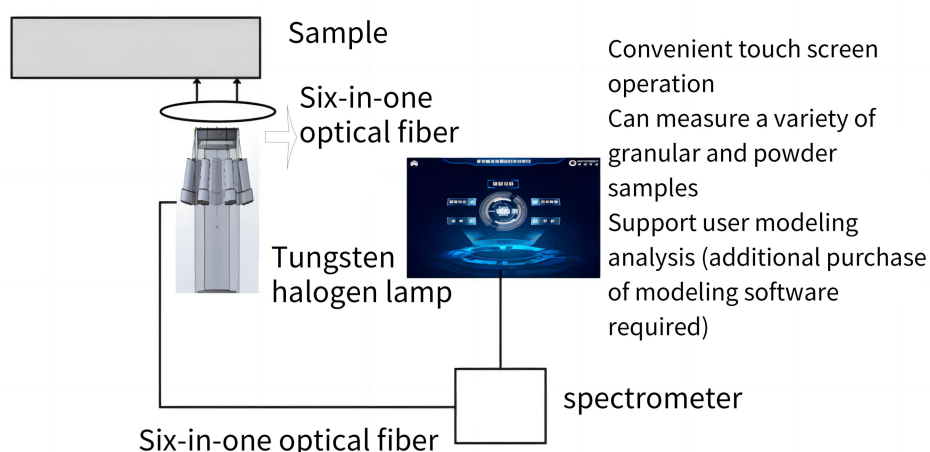
Model	Spectral Range
IR2000pro	900nm-1700nm
IR2000pro-17TC	900nm-1700nm
IR2000pro-25TC	900nm-2500nm
IR2000pro-11	600nm-1100nm



1 Working Principle

In the near-infrared spectrum region, the absorption of near-infrared light is caused by the stretching vibration of hydrogen-containing atomic groups such as N-H, O-H, and C-H with higher energy in the organic matter contained in the measured substance. This principle can be used to perform corresponding Quantitative analysis of substances.

As shown in the figure below, the instrument uses dual light sources to emit light. The light emitted by the light source is initially collimated through the lamp cup, and then the beam is incident obliquely on the sample at a certain angle. After diffuse reflection, the light is collected through the diffusion probe, and finally the light is collected through the optical fiber. The reflected light containing information enters the spectrometer for analysis and calculation.



2 Parameter

Specifications				
Model	IR2000pro	IR2000pro-17TC	IR2000pro-25TC	IR2000pro-11
Spectral Range	900nm-1700nm	900nm-1700nm	900nm-2500nm	600nm-1100nm
Analysis Parameters				
Analysis Time	Less than 60 seconds			
Analyzed Products	Rice, paddy, canola seeds, and expandable to wheat, barley, soybeans, corn, and other granular grains, or powdered samples like flour.			
Analysis Parameters	Rice, paddy: Amylose, protein, moisture, etc. Customizable to include tasting score values, fatty acids, and other indicators based on customer needs. Canola seeds: Moisture, erucic acid, glucosinolates, oil content, etc.			
Accuracy	±10% (relative error)			
Repeatability	CV≤5%			
Inter-instrument Variation	<3%			

Sample Tray Size	Φ120mm
Sample Amount (Rice)	Less than 100g
Optical Parameters	
Wavelength Accuracy	Less than 0.05nm
Spectral Resolution	0.1nm ~ 10nm optional
Light Source Lifespan	Not less than 10,000 hours
General Parameters	
Communication Method	USB, Ethernet port
Power Supply	110V~240V, 50/60Hz
Dimensions	550*400*250mm
Operating Conditions	Temperature range: (5-40)°C Humidity range: (30-85) %
Weight	12kg
Industrial Computer	i5 or higher processor, built-in Windows system and Chinese language software, ≥10-inch touch capacitive screen, user interface is simple and intuitive

3 Selection guide

Model	Description
IR2000pro	900nm-1700nm wavelength range
IR2000pro-17TC	900-1700nm, refrigerated spectrometer, can detect chemicals such as ethanol
IR2000pro-25TC	1700-2500nm range, with cooling, suitable for analyzing complex samples and components
IR2000pro-11	600-1100nm, used for measuring proteins and other components in samples like grains

4 Optional accessories

Optional accessories	
1	Sample tray
2	Measuring cup